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Tapani Ryhanen

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EXAMINER

RUSH, ERIC

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/763,805	<b>Applicant(s)</b> RYHANEN ET AL.	
	<b>Examiner</b> ERIC RUSH	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 31-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see pages 2 - 3 of the remarks, filed 17 August 2009, with respect to the rejection(s) of claim(s) 31 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No. 5,959,457 under 35 U.S.C. 103(a).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 35 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 35 recites the limitation "the finger" in line 3. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 36 is also rejected under 35 U.S.C. 112, second paragraph, as being indefinite as being dependent upon a rejected base claim, but would be withdrawn if it's base claim overcomes the rejection.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 31 - 34, 38 and 40 - 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No. 5,959,457.

- With regards to claim 31, Mathiassen et al. teach a sensor arrangement comprising at least one sensor, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) at least one integrated signal processing circuit for the measurement of signals from the at least one sensor, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) and interconnecting wiring between the at least one sensor and the integrated circuit, (Mathiassen et al., Column 2 Lines

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41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) the arrangement comprises a substrate, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) said substrate forming at least part of said interconnecting wiring and said substrate is further arranged to serve as a functional part of at least one said sensor, (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64) and wherein substrate comprises means for forming a sensor together with a sensor part. (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64, Column 4 Lines 2 - 13) Mathiassen et al. fail to teach wherein said substrate and said sensor part are galvanically separated, and wherein said substrate and said sensor part comprise means for transferring energy and measurement information inductively between said substrate and said sensor part. Berberich teaches wherein said substrate and said sensor part are galvanically separated, (Berberich, Figs. 1 and 4, Column 1 Lines 35 - 57, Column 3 Lines 51 - 60, Column 4 Lines 40 - 43) and wherein said substrate and said sensor part comprise means for transferring energy and measurement information inductively between said substrate and said sensor part. (Berberich, Figs. 1 and 4, Column 1 Lines 35 - 57, Column 3 Lines 51 - 60) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Mathiassen et al. with the teachings of Berberich. This modification would have been prompted so that no direct voltage acts

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on the sensor. Thereby, electrolytic deposits on or removals from the electrodes of the sensor may be prevented, as suggested by Berberich, Column 1 Lines 41 - 46. This combination of elements could be completed using known methods in the art and is likely to yield predictable results.

- With regards to claim 32, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said sensor part is a passive circuit. (Mathiassen et al., Column 6 Lines 10 - 19)
  
- With regards to claim 33, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to explicitly teach wherein said sensor part comprises an active circuit further comprising means for measuring sensor information and means for transferring the measurement information inductively to said substrate. Berberich teaches wherein said sensor part comprises an active circuit (Berberich, Column 2 Lines 1 - 8, Column 3 Lines 6 - 14) further comprising means for measuring sensor information and means for transferring the measurement information inductively to said substrate. (Berberich, Figs. 1 and 4, Column 1 Lines 35 - 57, Column 3 Lines 14 - 34 and Lines 51 - 60)

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- With regards to claim 34, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said sensor is a skin contact sensor. (Mathiassen et al., Abstract, Column 2 Lines 41 - 52)
- With regards to claim 38, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to teach wherein said arrangement further comprises a humidity sensor for sensing ambient humidity. Berberich teach wherein said arrangement further comprises a humidity sensor for sensing ambient humidity. (Berberich, Abstract, Column 2 Lines 57 - 64, Column 3 Lines 14 - 34)
- With regards to claim 40, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said arrangement further comprises a skin contact sensor. (Mathiassen et al., Abstract, Column 2 Lines 41 - 52)
- With regards to claim 41, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said arrangement further comprises a sensor fixed on the substrate. (Mathiassen et al., Column 2 Lines 41 - 52, Column 3 Lines 10 - 17 and Lines 53 - 64)

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- With regards to claim 42, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31, wherein said arrangement comprises a biometric sensor. (Mathiassen et al., Abstract, Column 2 Lines 41 - 52)

9. Claims 35 - 37, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No. 5,959,457 as applied to claim 31 above, and further in view of Harkin U.S. Patent No. 6,327,376.

- With regards to claim 35, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to teach wherein the arrangement further comprises a infrared light source, a infrared light detector and second measurement means for measuring absorption of infrared light from the finger. Harkin teaches an arrangement which comprises an infrared light source, (Harkin, Column 7 Line 55 - Column 8 Line 29) a infrared light detector (Harkin, Column 7 Line 55 - Column 8 Line 29) and second measurement means for measuring absorption of infrared light from the finger. (Harkin, Column 7 Line 55 - Column 8 Line 29) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Harkin. This modification would have been prompted in order to increase "the security of recognition



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or authentication by providing further validation and reducing the possibility of fraudulent deception through use, for example, of a replica finger.” (Harkin, Column 8 Lines 40 – 44)

- With regards to claim 36, Mathiassen et al. in view of Berberich and further in view of Harkin teach an arrangement according to claim 35. Mathiassen et al. teach wherein the arrangement comprises a groove designed for a finger. (Mathiassen et al., Column 8 Lines 29 - 34) Mathiassen et al. fail to teach wherein said infrared light source and said infrared light detector are located at opposite sides of a groove designed for a finger. Harkin teaches wherein said infrared light source and said infrared light detector are located at opposite sides of a groove designed for a finger. (Harkin, Column 7 Line 55 - Column 8 Line 29) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich and further in view of Harkin to include further teachings of Harkin. This modification would have been prompted in order to obtain a complete image of the whole finger surface, including the sides of the finger, As prompted by Mathiassen et al. in column 8 lines 29 - 35.
- With regards to claim 37, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to teach wherein

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said arrangement further comprises a temperature sensor for sensing ambient temperature. Harkin teaches wherein said arrangement further comprises a temperature sensor for sensing ambient temperature.

(Harkin, Column 8 Lines 24 – 29) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Harkin. This modification would have been prompted in order to increase “the security of recognition or authentication by providing further validation and reducing the possibility of fraudulent deception through use, for example, of a replica finger.” (Harkin, Column 8 Lines 40 – 44)

- With regards to claim 43, Mathiassen et al. in view of Berberich teach a sensor arrangement according to claim 31, see above. Mathiassen et al. fail to teach a mobile terminal, wherein it includes a sensor arrangement. Harkin teaches an arrangement in which a sensor arrangement is included in a mobile terminal. (Harkin, Column 10 Lines 15 - 50) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Harkin. This modification would have been prompted in order to incorporate an added level of security into personal portable electronic devices.

- With regards to claim 44, Mathiassen et al. in view of Berberich and further in view of Harkin teach a mobile terminal according to claim 43. Mathiassen et al. fail to teach wherein at least part of the sensor arrangement is encapsulated, such as molded, in the cover of the mobile terminal. Harkin teaches a mobile terminal characterized in that at least part of the sensor arrangement is encapsulated, such as molded, in the cover of the mobile terminal. (Harkin, Fig. 7, Column 10 Lines 15 – 50)

10. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mathiassen et al. U.S. Patent No. 7,251,351 in view of Berberich U.S. Patent No. 5,959,457 as applied to claim 31 above, and further in view of Ganapathi et al. U.S. Patent No. 6,829,950.

- With regards to claim 39, Mathiassen et al. in view of Berberich teach an arrangement according to claim 31. Mathiassen et al. fail to explicitly teach wherein said arrangement further comprises a pressure sensor. Ganapathi et al. teach an arrangement comprising a pressure sensor. (Ganapathi et al., Abstract) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Mathiassen et al. in view of Berberich to include the teachings of Ganapathi et al. This modification would have been prompted

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in order to eliminate the need for active circuit components (Ganapathi et al., Column 2 Lines 23 - 27) and to further reserve power by requiring pressure to activate instead of just skin contact while maintaining sensitivity to minimal pressure. (Ganapathi et al., Column 7 Lines 24 - 31) This combination of elements could be completed using known methods in the art and is likely to yield predictable results.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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